CLAIMS

1. A method for modeling a first device, the method comprising the steps of:

(a) receiving a measured electrical behavior in at least one of time and frequency domain, the measured electrical behavior at least substantially represents at least a portion of the electrical behavior of the first device, and

(b) modeling the first device by using a circuit with one or more circuit device, wherein each circuit device has a known model for its electrical behavior, and the circuit substantially represents the measured electrical behavior of the first device;

wherein the step b comprises a step of:

- approximating the measured signal response by sections of a curve, preferably by sections of a section-wise substantially linear curve.

2. The method of claim 1, wherein the measured electrical behavior comprises at least one of a group comprising:

- a measured signal response on a predetermined electrical signal provided as stimulus signal to the first device,

- a response on a step signal, so that the measured electrical behavior comprises a step response.

3. The method of claim 1, wherein the step b comprises a step of:

- delimiting the sections by sampling points of the signal response preferably being time-sampled.

4. The method of claim 1, wherein the step b comprises a step of:

- modeling the section-wise curve by pulses, each pulse having a

transition substantially in the range between neighboring sections, each pulse is controlling at least one of a current or voltage source which output signal corresponds with a slope of a respective section of the section-wise curve, the output signals of the sources are superimposed to form the approximated section-wise curve.

5. The method of claim 1, wherein the step of modeling the section-wise curve comprises:

- modeling a pulse unit adapted for providing a plurality of pulses, wherein each pulse has a first transition substantially in the range of a start of a corresponding section and a second transition substantially in the range of an end of the corresponding section, and

- modeling an integrating unit adapted for receiving the plurality of pulses or corresponding signals derived therefrom and integrating them to substantially form the approximated section-wise curve.

6. The method of claim 1, comprising the step of:

- calculating an at least substantially ideal step response from a measured real step signal having finite slew rate and from the measured response on the real step signal.

7. The method of claim 6, using at least one of Fourier Transformation and Fast Fourier Transformation for calculating the ideal step response.

8. The method of claim 1, further comprising a step of using the model of the first device in at least one of a simulation system and a SPICE simulation system.

9. The method of claim 1, wherein the first device is at least one of: a substantially linear device, a substantially time-invariant device, an electrical device, an electronic device, a signal path, a high-speed signal

path, a line drive output, a line drive output of an automated test equipment, an n-port network.

10. The method of claim 1, wherein the electrical behavior of the first device is measured using at least one of a time domain reflection measurement and a time domain transmission measurement.

11. The method of claim 1, further comprising the step of:

- measuring the electrical behavior of the first device in at least one of time and frequency domain.

12. The method of claim 1, wherein the step b comprises a step of:

- approximating the measured signal response by sections of a section-wise substantially linear curve.

13. A software program or product, preferably stored on a data carrier, for executing the method of claim 1 when running on a data processing system such as a computer.

14. A system for simulating electronic circuits using a model of a first device, being a linear time invariant electrical or electronic device, e.g. a signal path or a n-port network, the model of the first device being modeled according to the method of claim 1 or any one of above claims.

15. A system for modeling a first device, comprising:

a receiver adapted for receiving a measured electrical behavior in at least one of time and frequency domain, the measured electrical behavior at least substantially represents at least a portion of the electrical behavior of the first device, and

a modeling unit adapted for modeling the first device by using a circuit with one or more circuit device, wherein each circuit device has a known

model for its electrical behavior, and the circuit substantially represents the measured electrical behavior of the first device, and wherein the modeling unit is adapted for approximating the measured signal response by sections of a curve.

16. The system of claim 15, further comprising:

a measuring unit adapted for measuring the electrical behavior of the first device in at least one of time and frequency domain.